TREND STUDY 1-21-96

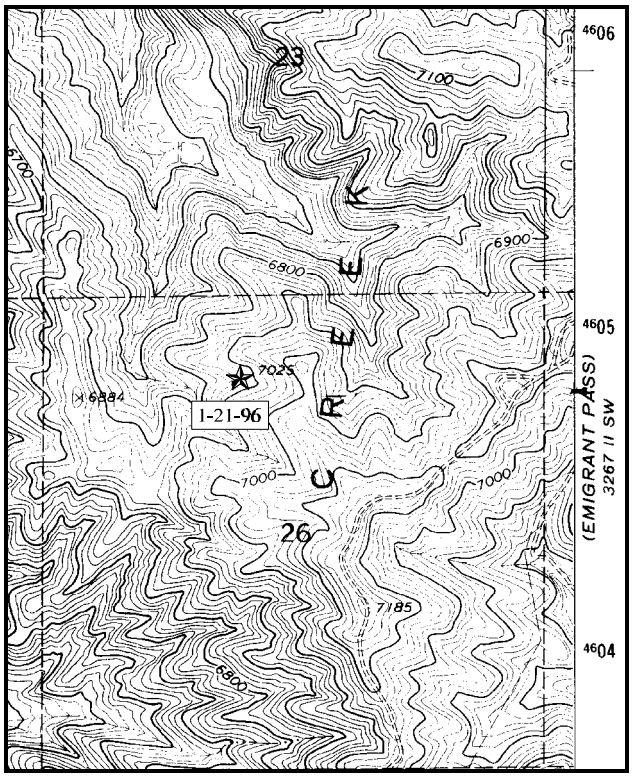
Study site name: Keg Spring . Range type: Mixed mountain brush .

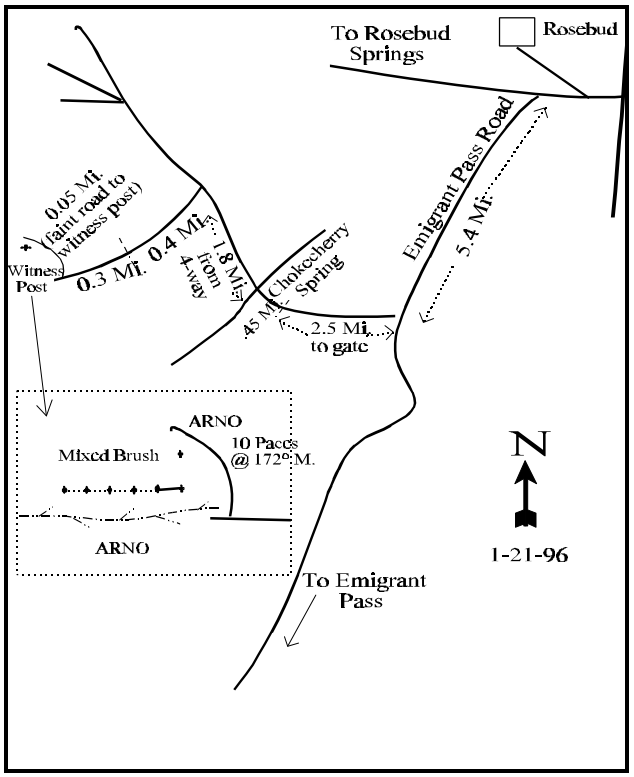
Compass bearing: frequency baseline 241 degrees magnetic.

Footmark (first frame placement) 5 feet, footmarks (frequency belts) Line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

LOCATION DESCRIPTION

From the Rosebud Spring, Emigrant Pass Road intersection, travel up the Emigrant Pass Road for 5.4 miles. Turn right and travel 2.5 miles to a gate. Continue for 0.45 miles to a four way intersection. Continue straight through the intersection and drive 1.8 miles. Take a left and go 0.4 miles to another fence. From the fence, travel 0.3 miles and take a right at a faint road. Drive 0.05 to a witness post on the left hand side of the road. From the witness post, walk 10 paces at a bearing of 172 degrees magnetic. The baseline runs 241 degrees magnetic.





Map Name: Rocky Pass Peak Diagrammatic Sketch

Township 10N Range 17W , Section 26 , UTM: 2-69-750E 46-04-845N

DISCUSSION

Trend Study No. 1-21

The new study samples critical summer range above Keg Spring near the summit of the Grouse Creek Mountains. The vegetative type is mixed mountain brush. The site is on the south facing side of a long ridge which runs west. Slope is 13% to 17% and elevation is approximately 6,950 feet. There is no water nearby except from springs found further down the canyon at Keg and Willow Spring. Deer utilize this area most of the year except when snow forces them to lower elevations.

The soil is moderately shallow on the top of the ridge top, but noticeably deeper down slope where the base line occurs where the effective rooting depth is estimated at >21 inches (see methods). Protective cover from vegetation and litter are abundant and well dispersed leaving little bare soil exposed (<3%). Erosion is not currently a problem.

The dominant browse species include basin big sagebrush, mountain big sagebrush, and snowberry. Basin big sagebrush, intermixed with the mountain big sagebrush, has a density of 1,560 plants/acre. Mature plants are large and vigorous measuring nearly 3 feet in height with a crown of just over 3½ feet. Utilization is mostly light yet percent decadency is moderately high at 25%. Dead plants number an estimated 600 plants/acre, about 28% of the population. This past die-off would not be related to heavy use for it does not occur on basin big sagebrush. As has occurred in many other areas of the state, most likely the deeper rooted basin big sagebrush was affected by the prolonged drought and/or winter injury.

Mountain big sagebrush has a density of approximately 2,500 plants/acre, 70% of which are classified as mature. Utilization is generally light with moderate use noticed on some plants. Percent decadency is fairly low at 23%. The number of dead plants were estimated at 280/acre, or about 10% of the population.

Snowberry is the most abundant shrub on the site with a density of 3,840 plants/acre, which also provides the most browse cover (37%) of all browse species. Many of the plants were infested with insects which reduced the vigor for 41% of the population. All plants appear not to be utilized.

The herbaceous understory is diverse and abundant. However, the most abundant and dominant grass is cheatgrass, which accounts for 46% of the grass cover. Common perennial species include bluebunch wheatgrass, great basin wildrye, and Sandberg bluegrass. The forb component contains several useful species including, arrowleaf balsamroot, Indian paintbrush, northern sweetvetch, silvery lupine, and bluebell.

1996 APPARENT TREND ASSESSMENT

Abundant protective vegetation and litter cover provide excellent soil protection on this site. Percent bare ground is estimated at less than 3% with no serious erosion occurring. The key browse species is mountain big sagebrush followed by basin big sagebrush. Sagebrush shows only light to moderate utilization. It is in good vigor and has adequate seedlings and young to maintain their populations. Trend appears stable. The herbaceous understory is diverse and abundant. The grass component, however, is dominated by annual cheatgrass which contributes 46% of the grass cover.

HERBACEOUS TRENDS --
Herd unit 01 , Study no: 21

Type	Species	Nested Frequency '96	Quadrat Frequency '96	Average Cover % '96
G	Agropyron dasystachyum	10	3	.06
G	Agropyron spicatum	119	41	3.86
G	Agropyron trachycaulum	4	2	.03
G	Bromus tectorum (a)	225	51	9.33
G	Elymus cinereus	80	27	4.72
G	Koeleria cristata	10	3	.04
G	Melica bulbosa	2	1	.03
G	Poa secunda	67	23	1.14
G	Sitanion hystrix	1	1	.03
G	Stipa columbiana	13	9	.82
Total for Grasses		531	161	20.11
F	Agoseris glauca	48	22	.13
F	Agastache urticifolia	13	4	.59
F	Allium spp.	15	8	.04
F	Astragalus beckwithii	42	14	.49
F	Aster spp.	1	1	.00
F	Balsamorhiza sagittata	18	7	1.11
F	Borago officinalis	55	22	.86
F	Castilleja linariaefolia	2	1	.00
F	Collomia linearis (a)	88	33	.51
F	Collinsia parviflora (a)	284	76	2.66
F	Crepis acuminata	77	30	1.77
F	Cryptantha spp.	12	4	.04
F	Delphinium bicolor	11	6	.05
F	Descurainia pinnata	16	4	.02
F	Galium aparine (a)	40	12	.16
F	Hackelia patens	35	17	.43
F	Hedysarum boreale	10	5	.31
F	Lappula occidentalis (a)	7	3	.01
F	Lithospermum ruderale	27	12	1.00
F	Lomatium triternatum	7	4	.02
F	Lupinus argenteus	54	30	2.08
F	Mertensia oblongifolia	2	2	.03
F	Microsteris gracilis (a)	7	4	.02
F	Navarretia intertexta (a)	36	14	.14
F	Phlox longifolia	55	21	.20
F	Polygonum douglasii (a)	62	22	.16

Type	Species	Nested Frequency ‘96	Quadrat Frequency ‘96	Average Cover % ‘96
F	Veronica biloba (a)	21	6	.08
F	Viola adunca	38	18	.09
Total for Forbs		1083	402	13.08

BROWSE TRENDS --
Herd unit 01 , Study no: 21

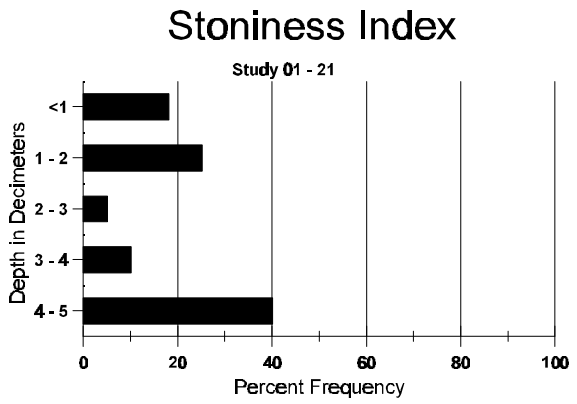
Type	Species	Strip Frequency '96	Average Cover % '96
B	Amelanchier utahensis	2	.18
B	Artemisia tridentata tridentata	32	3.15
B	Artemisia tridentata vaseyana	46	7.64
B	Chrysothamnus nauseosus consimilis	28	1.54
B	Chrysothamnus viscidiflorus stenophyllus	55	5.84
B	Eriogonum microthecum	1	.15
B	Juniperus osteosperma	1	-
B	Symphoricarpos oreophilus	63	10.71
Total for Browse		228	29.23

BASIC COVER --
Herd unit 01 , Study no: 21

Cover Type	Nested Frequency '96	Average Cover % '96
Vegetation	475	59.40
Rock	120	1.69
Pavement	129	3.55
Litter	496	68.39
Cryptogams	13	.05
Bare Ground	129	2.63

SOIL ANALYSIS DATA --
Herd Unit 01, Study no: 21

Effective rooting depth (inches)	Temp °F (depth)	PH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
21.8	49.5 (19.4)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



PELLET GROUP FREQUENCY --
Herd unit 01 , Study no: 21

Type	Quadrat Frequency '96
Rabbit	2
Deer	15

BROWSE CHARACTERISTICS --
Herd unit 01 , Study no: 21

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Amelanchier utahensis																		
M	96	1	1	-	-	-	-	-	-	-	2	-	-	-	40	33	42	2
Total Plants/Acre (excluding Dead & Seedlings) '96															40	Dec:		-
Artemisia tridentata tridentata																		
Y	96	15	-	-	3	-	-	-	-	-	18	-	-	-	360			18
M	96	31	5	-	4	-	-	-	-	-	40	-	-	-	800	35	43	40
D	96	12	8	-	-	-	-	-	-	-	19	-	-	1	400			20
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	600			30
Total Plants/Acre (excluding Dead & Seedlings) '96															1560	Dec:		26%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
S	96	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
Y	96	8	1	-	-	-	-	-	-	-	9	-	-	-	180			9
M	96	69	17	-	1	-	-	-	-	-	87	-	-	-	1740	23	28	87
D	96	23	5	-	1	-	-	-	-	-	20	-	1	8	580			29
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	280			14
Total Plants/Acre (excluding Dead & Seedlings) '96															2500	Dec:		23%
Chrysothamnus nauseosus consimilis																		
Y	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
M	96	42	-	-	6	-	-	-	-	-	48	-	-	-	960	29	34	48
D	96	4	-	-	-	-	-	-	-	-	3	1	-	-	80			4
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	60			3
Total Plants/Acre (excluding Dead & Seedlings) '96															1080	Dec:		7%
Chrysothamnus viscidiflorus stenophyllus																		
Y	96	5	-	-	2	-	-	-	-	-	7	-	-	-	140			7
M	96	114	-	-	15	-	-	-	-	-	128	-	1	-	2580	15	20	129
D	96	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1
Total Plants/Acre (excluding Dead & Seedlings) '96															2740	Dec:		1%
Eriogonum microthecum																		
M	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60	8	12	3
Total Plants/Acre (excluding Dead & Seedlings) '96															60	Dec:		-
Juniperus osteosperma																		
Y	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
Total Plants/Acre (excluding Dead & Seedlings) '96															20	Dec:		-
Purshia tridentata																		
M	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0	28	57	0
Total Plants/Acre (excluding Dead & Seedlings) '96															0	Dec:		-
Symphoricarpos oreophilus																		
S	96	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	96	35	-	-	26	-	-	-	-	-	46	-	8	7	1220			61
M	96	90	-	-	13	-	-	-	-	-	59	7	37	-	2060	23	42	103
D	96	27	-	-	1	-	-	-	-	-	1	-	6	21	560			28
X	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
Total Plants/Acre (excluding Dead & Seedlings) '96															3840	Dec:		15%